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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,341	06/29/2000	John Douceur	MSI-480US	8869
22801	7590	01/28/2005	EXAMINER	
LEE & HAYES PLLC 421 W RIVERSIDE AVENUE SUITE 500 SPOKANE, WA 99201			KIANERSI, MITRA	
			ART UNIT	PAPER NUMBER
			2145	

DATE MAILED: 01/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,341

Applicant(s)

DOUCEUR ET AL.

Examiner

Mitra Kianersi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claims 1-22 have been examined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Wolff (US Patent No.6, 101,508)

1. As per claim 1, a multi-stage handle administration system in which handles are capable of assuming states comprising:

- an unassigned state in which a handle is not assigned to a particular resource; (In FIG. 1A, a plurality of clients interface, via a plurality of nodes, with a resource. A memory resource 118, nodes, e.g. utilization servers 104A-106A, and clients, e.g., a normal client 100A, and an aware client 102A are shown. Servers, nodes, and clustered file system nodes (CFNs) 104A-106A are connected to the storage resource through a private network 112.
- an assigned state in which a handle is assigned to a particular resource and can be dereferenced to obtain a pointer to the resource; (Each file system is assigned to be maintained by an administrative server. There is only one administrative server per resource, e.g. volume/file system, at any time. A server that is an administrative server with respect to one file system can be a data transfer server with respect to another file system, col 6, lines 49-55).
- a suspended state in which a handle is assigned to a particular resource but

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cannot be dereferenced to obtain a pointer to that resource. (FIG. 10C illustrates the subroutine 1060 of FIG. 10B. The subroutine serves to insure that each node has the same copy of the cluster configuration database 120A-B. The subroutine is initiated at process 1080 and control is passed to process 1082, which sets a variable "timeout" to Boolean False. Control is then passed to process 1083, where the nodes are brought (to a quiet state in which all I/O is suspended. This is done by sending a suspend I/O command to each node and receiving a response from each. (col 34, lines 64-67) and (col 35, lines 1-5).

2. As per claims 2, 12 and 19, the handle administration system, wherein handles can be suspended from the assigned state into the suspended state. (FIG. 10C illustrates the subroutine 1060 of FIG. 10B. The subroutine serves to insure that each node has the same copy of the cluster configuration database 120A-B. The subroutine is initiated at process 1080 and control is passed to process 1082, which sets a variable "timeout" to Boolean False. Control is then passed to process 1083, where the nodes are brought to a quiet state in which all I/O is suspended. This is done by sending a suspend I/O command to each node and receiving a response from each. (col 34, lines 64-67) and (col 35, lines 1-5).

3. As per claims 3, 13 and 20, the handle administration system, where handles can be reinstated from the suspended state into the assigned state. (the acts of detecting a change in the availability of the server nodes and rebalancing the network by applying a load balancing function to the network in order to re-assign each of the available resources to a corresponding available administrative server node that is responsive to the detecting act. Also, the method for operating a network comprises the acts of redirecting an I/O request for a resource to an underutilized server node coupled to the resource. Col 2, lines 56-59)

4. As per claims 4, 14 and 21, the handle administration system, wherein handles can be released from the suspended state to the unassigned state. (At process 1064

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removing the node identifier from the semaphore field and releasing the reservation of the sector in which the lock was located release the configuration database. Control then passes to process 1066, where the configuration and balance process is exited.

5. As per claims 5, 15 and 22, the handle administration system, wherein handles can be released from both the suspended and the assigned states to the unassigned state. (In process 1520, the client writes its ID in the corresponding log on field 1356 (see FIG. 13A) in the access control table 1206. Control then passes to process 1524. In process 1524, the client releases the access and control tables by removing their identifier from the semaphore field 1352. Control then passes to processes 1526 in which the access control module 1266 (see FIG. 12C) sets the access privileges for each physical device in accordance with those privileges indicated in the access and control table for the specific client running this process.)

6. As per claim 6, the handle administration system, further comprising a handle database that is configured to contain indicia that indicate whether a handle is assigned, unassigned or suspended. (FIGS. 7A-D. Fields 420H-I contain variables which indicate the ideal node capacity and remaining node capacity. In the embodiments shown, ideal capacity is indicia of the portion of the clustered resources with which each specific node should be associated).

7. As per claim 7, the handle administration system, wherein said indicia comprise a field for holding a value that indicates that a handle is in a suspended state. (FIGS. 7A-D. Fields 420H-I contain variables which indicate the ideal node capacity and remaining node capacity. In the embodiments shown, ideal capacity is indicia of the portion of the clustered resources with which each specific node should be associated).

8. As per claim 8, the handle administration system, wherein said indicia comprises a handle value field for holding a value that indicates that a handle is in a suspended state. FIGS. 7A-D. Fields 420H-I contain variables which indicate the ideal node

capacity and remaining node capacity. (ideal capacity is an indicia of the portion of the clustered resources with which each specific node should be associated).

9. As per claim 9, a handle administrator configured to manage handles that are associated with resource, the handle administrator being configured to place the handle in one of more than possible states, which affect whether a handle can be dereferenced to provide a pointer to the resource with which the handle is associated. (Resource rebalancing allows the network to reconfigure itself as components come on-line/off-line, as components fail, and as components fail back, col 2, lines 49-51).

10. As per claim 10, the handle administrator, wherein one of the states comprises a suspended state in which the handle is associated with a particular resource but cannot be dereferenced into a pointer to that resource. (FIG. 10C illustrates the subroutine 1060 of FIG. 10B. The subroutine serves to insure that each node has the same copy of the cluster configuration database 120A-B. The subroutine is initiated at process 1080 and control is passed to process 1082, which sets a variable "timeout" to Boolean False. Control is then passed to process 1083, where the nodes are brought to a quiet state in which all I/O is suspended. This is done by sending a suspend I/O command to each node and receiving a response from each. (col 34, lines 64-67) and (col 35, lines 1-5).

11. As per claim 11, the handle administrator, wherein two of the states comprise: an assigned state in which a handle is associated with a resource and can be dereferenced to provide a pointer to that resource; and an unassigned state in which the handle is not associated with any resources. (Each file system is assigned to be maintained by an administrative server. There is only one administrative server per resource, e.g. volume/file system, at any time. A server that is an administrative server with respect to one file system can be a data transfer server with respect to another file system).

12. As per claim 16, a handle administration system comprising: one or more computer-readable media; and software code embodied on the computer-readable media which is software code configured implement a handle administration system that comprises:

- an unassigned state in which a handle is not assigned to a particular resource; (In FIG. 1A, a plurality of clients interface, via a plurality of nodes, with a resource. A memory resource 118, nodes, e.g. utilization servers 104A-106A, and clients, e.g., a normal client 100A, and an aware client 102A are shown. Servers, nodes, and clustered file system nodes (CFNs) 104A-106A are connected to the storage resource through a private network 112.
- an assigned state in which a handle is assigned to a particular resource and can be dereferenced to obtain a pointer to the resource; (Each file system is assigned to be maintained by an administrative server. There is only one administrative server per resource, e.g. volume/file system, at any time. A server that is an administrative server with respect to one file system can be a data transfer server with respect to another file system, col 6, lines 49-55) and a suspended state in which a handle is assigned to a particular resource but cannot be dereferenced to obtain a pointer to that resource. (FIG. 10C illustrates the subroutine 1060 of FIG. 10B. The subroutine serves to insure that each node has the same copy of the cluster configuration database 120A-B. The subroutine is initiated at process 1080 and control is passed to process 1082, which sets a variable "timeout" to Boolean False. Control is then passed to process 1083, where the nodes are brought (to a quiet state in which all I/O is suspended. This is done by sending a suspend I/O command to each node and receiving a response from each. (col 34, lines 64-67) and (col 35, lines 1-5).

13. As per claim 17, a resource management system configured to manage resources comprising:

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one or more resources that can be consumed by one or more agents; (multiple clients make I/O requests which are directed to a particular resource on the network. A server on the network receives and carries out the I/O requests. (When a server receives multiple I/O requests the server queues them and then services them one at a time. Once a queue begins to accumulate, subsequent I/O requests must sit in the queue until the previous I/O requests are serviced. (multiple clients make I/O requests which are directed to a particular resource on the network. Col 1, lines 62-67 and col 2, lines 1-2)

-a handle administrator configured to administer a handle system in which handles to the one or more resources are provided to the agents and can be dereferenced into pointers to the one or more resources, the handle system comprising more than two states for a handle, the states comprising:

an assigned state in which a handle is associated with a resource and can be dereferenced into a pointer to that resource; (In FIG. 1A, a plurality of clients interface, via a plurality of nodes, with a resource. A memory resource 118, nodes, e.g. utilization servers 104A-106A, and clients, e.g., a normal client 100A, and an aware client 102A are shown. Servers, nodes, and clustered file system nodes (CFNs) 104A-106A are connected to the storage resource through a private network 112.

-an unassigned state in which the handle is not associated with a resource and cannot be dereferenced into a pointer to any resources; (Each file system is assigned to be maintained by an administrative server. There is only one administrative server per resource, e.g. volume/file system, at any time. A server that is an administrative server with respect to one file system can be a data transfer server with respect to another file system, col 6, lines 49-55)

a suspended state in which the handle is associated with a resource. (FIG. 10C illustrates the subroutine 1060 of FIG. 10B. The subroutine serves to insure that each node has the same copy of the cluster configuration database 120A-B. The subroutine is initiated at process 1080 and control is passed to process 1082, which sets a variable "timeout" to Boolean False. Control is then passed to process 1083, where the nodes are brought (to a quiet state in which all I/O is suspended. This is done by sending a

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suspend I/O command to each node and receiving a response from each. (col 34, lines 64-67) and (col 35, lines 1-5).

14. As per claim 18, the resource management system further comprising: one or more agents that are Consumers of one or more resources. (multiple clients make I/O requests which are directed to a particular resource on the network. A server on the network receives and carries out the I/O requests. When a server receives multiple I/O requests the server queues them and then services them one at a time. Once a queue begins to accumulate, subsequent I/O requests must sit in the queue until the previous I/O requests are serviced. (multiple clients make I/O requests which are directed to a particular resource on the network. Col 1, lines 62-67 and Col 2, lines 1-2)

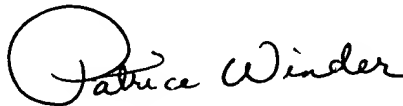
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi
Jan/21/2005



PATRICE WINDER
PRIMARY EXAMINER